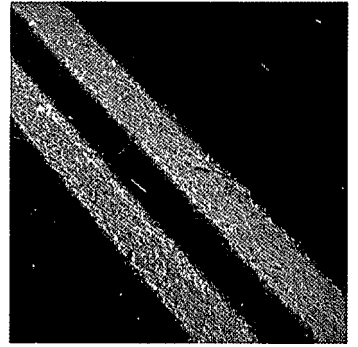


"Ushering in a
New Generation of
Transportation
Applications"



a M-DOT and CBSI Joint Initiative

PROSE Overview



Michigan Department of Transportation (M-DOT) started its Systems Re-engineering process with a clear road map the PROSE initiative. PROSE, standing for PROject Support Environment, is an ambitious venture to develop strategic information systems automating all support activities in the project realization process.

The objective is to build systems that serve specialized business functions, integrate seamlessly with other applications and respond quickly to process change.

Started in August 1993, today PROSE has grown to a suite of four applications serving the division of Engineering Services. Systems for Real Estate, Traffic & Safety and Maintenance Divisions are currently under development. PROSE has gained wide acceptance in the department and continues to grow stronger.

Today, PROSE provides immediate access to support task information of all active projects. Electronic transmission helps the process of review by concerned groups. The relevant users are automatically notified of job actions such as, agreement approval, utility status report, task completion and Project Development Engineers can closely monitor the progress of tasks relating to their projects.

PROSE has helped define M-DOT standards for Application Design, Development and Implementation. The Technical architecture for PROSE includes **ORACLE** RDBMS on **UNIX** servers and **PowerBuilder** as the front-end tool. **Novell LAN** with **TCP/IP** and **SQL*Net** forms the network environment. Electronic messaging is supported by Novell **Groupwise**, Document management by **WordPerfect**. All applications are designed using **ERWIN database tool** and End-Users are provided with **Infomaker** for the adhoc-query tool.

VISION

*"To empower
M-DOT customers
with an enterprise
wide information
management platform
for timely information
and improve
operational
effectiveness in the
project realization
process"*



MISSION

*"To provide Quality Information for all
Transportation needs"*

Agreements Management System



GOAL "To track the agreement process from cradle to grave"

The Agreements Management System automates the Michigan Department of Transportation's process of administering agreements/contracts as part of trunkline and non-trunkline projects. It automates the process of writing the agreements as well. It has significantly changed the way agreement information is shared and moved around the department. The system has provided easy access to the Project Information System database and obtains agreement requests electronically.

The development began in January, 1994 and was delivered to the customers in June, 1994. The system has about a dozen users in Engineering Services and the Bureau of Finance and will have over 50 department customers including Engineering Services, Traffic and Safety, Transportation planning and Design in the next phase. Customers received hands-on classroom training in the use of the system when it was delivered. A support group is available to assist customers with questions and to provide operational information.

Benefits:

- Improved ability to support the Department's mission
- Track the agreements from "cradle to grave"
 - Improved the coordination between Governmental Coordination Engineering, Project Management, Local
- Governmental Units and the Bureau of Finance
 - Improved service to Project Managers and Local Government Units
 - Improve the quality of future decision making
- Improve ability to respond to process change
 - Increased the Section's productivity
 - Identify "critical path" agreements and help eliminate costly project delays
 - Improved ability to perform continuous process improvement by monitoring current performance
 - Provided the ability to interface with and support other systems (MAP FOS etc.)

"PROSE/AMS is a great example of M-DOT using technology to improve our customer satisfaction. "

Dale Vandenberg
Chief Engineer
Engineering Services Division
Bureau of Highways

"AMS has given me a way to obtain up to the minute information on our contracts. "

Rudolph Cadena
AMS Customer project leader
Engineering Services Division

The screenshot displays the 'AMS - Main' application window. The title bar reads 'AMS - Main'. The menu bar includes 'File', 'Agreement', 'Requests', 'Agreement Inquiry', 'Browser', 'Windows', 'Admin', and 'Help'. The toolbar contains icons for 'Approvals', 'Add Agmt', 'Edit', 'Status', 'VP Doc', 'Add Post', 'Review', 'On Hold', 'Close', and 'Exit'. The main window is titled 'Agreements - Contract No. 951021'. It contains a 'Main Contract Information' section with the following fields: 'Contract No.' (951021), 'Status' (Director Signs, GCE distributes), 'Request Id.' (8971), 'File Code' (203), 'Format Type' (STANDARD), 'Auth Date' (00/00/00), 'Deposit' (No Depos), 'Format Subtype' (RFFAONLY), 'Target Date' (09/01/95), 'High Imp. Ind.' (unchecked), 'Agmt Type' (NON-TRUNKLINE), 'Exp. Date' (00/00/00), 'Engineer' (Pierre, Enc), 'Agmt Subtype' (STP), 'RC Lot No.' (empty), 'RC Box No.' (empty), and 'Requestor' (Hynes, Tom). Below this is a 'Detailed Information' section with buttons for 'Job Numbers...', 'Obligations...', 'Agencies...', 'Amend/Vald', 'Approvals...', 'Project Funding...', 'Contract Descript...', 'Worktypes...', 'Related Agreements...', 'Status Change...', 'Control Sections...', and 'Structure...'. At the bottom are 'OK', 'Cancel', 'Delete', and 'Help' buttons.



"PROSE/URTS brings all the data relating to utility relocations and reimbursements to a single source thus reducing paper flow, *increasing consistency, and making project utility information more accessible to the designer.*"

Dave Spangenberg
Utilities Coordination
Engineer

Utility Relocation Tracking System

GOAL "To electronically track and unify the Lansing and district offices efforts to clear individual projects of utility conflicts"

Utility Relocation and Tracking System (URTS) automates the coordination of M-DOT construction projects with private or municipal utilities. Coordination is required whenever construction work affects the private or municipal utilities within the right of way. It involves planning, organizing, and scheduling work of the utilities to be clear of the area that M-DOT's contractors will be working in.

The Utilities Unit of the Engineering Services Division, and M-DOT District Office Utility Permit Engineers are the users of the system.

The system unifies all the data required for tracking the utility relocation process that previously existed in several independent data systems. The Utility Engineer is now able to electronically certify that a project is clear of utility conflicts and ready to be let.

Electronic Messaging: When a user at a district office updates the database with a Status Report regarding the status of relocation of utilities for a construction project, Lansing personnel are informed through an electronic message. This type of message alerts the users about changes to the database and increases process efficiency by reducing the waiting period.

Sharing WordPerfect files: Memo files, such as coordination clauses, will be stored on a common server and shared by all users who are geographically dispersed. Creation, Retrieval and Modification of these files is handled in the background with appropriate access control to authorized users.

Benefits:

Track the planning, designing, organizing and scheduling of work between contractors and private or municipal utilities from start to finish

Immediate on-line access to all relevant data

Electronic messages, signing-off and signatures

- Electronic storage of Authorizations to relocate utilities in private right of way

Certification to the Design Division that all utilities have been relocated, or will be, prior to awarding the contract

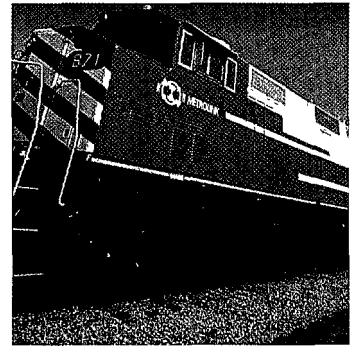
- Produce custom reports

Maintain auxiliary data in on-line tables

25% reduction in utility relocation time

Railroad Coordination Program Management System

GOAL "To provide an **electronic trucking tool** of vast information for cdl railroad projects statewide"



Railroad Coordination Program Management System (RCPMS) automates Railroad project activities performed by the Railroad Coordination and Engineering (RCE) Section of the Engineering Services Division in the Bureau of Highways. This system goes beyond preconstruction through construction and final audit phases of railroad crossing projects.

The system provides information on:

- Trunkline grade-crossing projects
- Trunkline structure projects
- Local grade-crossing projects
- Financial details of projects
- State and federal safety program budgets
- Master and individual project agreements
- Crossing and structure inventory
- Railroad personnel contacts and addresses
- Historical retrieval of project types and costs
- Process weaknesses

The process starts with Diagnostic Review of a location. After review approval, the project development begins. A project involves several work types carried out at several locations by railroads/agencies. The railroads electronically provide estimates to M-DOT. The project is split into distinct jobs, each executed by a railroad/agency. The system tracks the progress of the project; provides messaging between the railroad and M-DOT; stores general and project related notes; maintains the master database of railroads, estimates, project tasks, agreements, crossing locations and structure locations. Federal and State Budgets can be input and utilization can be monitored. Billing history, changes to job estimates (Form- 1100) and Auditing information are maintained for each job. At any time, the users can get a list of things-to-do that require attention.

The system provides Executive Summaries which are analyses of project information on factors such as work types, costs, fiscal years, funding sources, railroads and execution times to help in better coordination, control and execution.

The system provides capability to generate correspondence letters by retrieving data from the database and merging it with standard templates. Ad-hoc reports can also be generated.

Benefits:

Consolidates many individual data bases into a single system

- Easily generates a finished version of correspondence from data stored in the system
- Tremendous sorting capabilities
- Creates numerous required reports
- Railroad companies can access mini screens to verify status of their projects
- Program designed for WINDOWS environment for easy accessibility and usage
- With downsizing of State Government, this is an excellent tool to continue operations in a timely manner

"RCPMS consolidates numerous databases into a single effortless project tracking system, permitting accessibility by Railroads and Districts. "

George Erickson
Railroad Coordination
Engineer



Litigation Management System

GOAL "To provide an effective data management tool"

"LMS allows online viewing, tracking and managing our four related work areas "

Paul Schafer
*Litigation Coordinator,
Freedom of Information
Officer*

Litigation Management System (LMS) provides for storage and coordinated centralized access of tort liability cases from the incident through the court case. It has the ability to track and monitor the status of the several processes involved. The application is divided into four main processes: Attorney General Investigation, Litigation, Risk Management, and Freedom of Information. This system replaces and/or supplements manual procedures and mainframe systems.

The Risk Management Section of the Engineering Services Division, Bureau of Highways; the Attorney General Negligence Division; M-DOT District Divisions & Bureau of Litigation; FOI Coordinators; and selected Expert Witnesses.

Benefits:

- A department wide access to Risk Management data
- An interactive, user-friendly, automated system to support Risk Management function
- Immediate on-line access to all relevant data for given cases
- Integrated cross-referencing of Attorney General, Litigation, FOI Request and Risk Management data
- Enhanced data query abilities, including simultaneous multi-key search and sort capacity, with partial string field searches
- Numerous predefined reports, and sophisticated reporting features such as integrated querying and sorting ability
- Discovery Request tracking by division
- Streamlined support for the AG Upload process at the PC level

Links to related WordPerfect report files

The screenshot shows the LMS - Main application window. The title bar reads "LMS - Main". The menu bar includes "File", "Process", "Windows", and "Help". The toolbar contains icons for AGI, UT, UTREP, FOI, FOI REP, RM, CHECK, ADMIN, AG, and EXIT. Below the toolbar, there are tabs for "AGI Info" and "Reports". The "AGI Info" tab is active, displaying "AGI Info - AGI Number 3308". The form contains the following fields and controls:

- Accident Date: 00/00/00
- Investigator: CHURCHILL (dropdown menu)
- Complaint Received Date: 00/00/00
- Site Inv Date: 00/00/00
- Report: (dropdown menu)
- Report Filed Date: 00/00/00
- Exception: (text field)
- Dept. Code: (text field)
- Rec Ctr. Loc: (text field)
- Box: (text field)

Buttons on the right side of the form include "Update", "Cancel", "Next", and "Help". A "Report" button is located at the bottom left of the form.

Local Agency Payment System

GOAL “To provide a quality monitoring and payment system for contractual maintenance performed by local agencies that *will* improve the operational efficiency, economy and *effectiveness* of Department operations”



LAPS (Local Agency Payment System) streamlines the payment system for Contract Local Agencies. It is a cross-functional information system consisting of five modules to track and process Billing information. The system is primarily responsible for;

- Collecting routine and non-routine maintenance billing submitted from Contract agencies
- Validating billing transactions against M.DOT's database
- Assisting in review and approval of billing
- Maintaining budgeting and forecasting
- Generating vouchers for payment
- Auditing of billing

LAPS is used by Counties and Cities to send billings; by District Engineers to review them; by the Bureau of Finance to approve and make payments; and by Office of Commission Audit to audit. It is also used by Maintenance Central Office and Districts for budget allocation and monitoring. The five modules are described below:

Bill verification and loading is initiated when Local Agency billings are submitted. Each billing is verified for consistency and against other M.DOT databases like Permits, Signal Inventory and Structures. The system notifies authorized District officials or Finance regarding arrival of Bills through the standard mailing system.

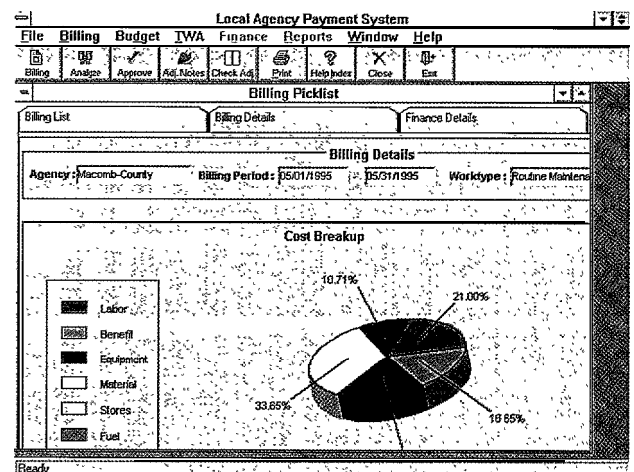
Expense Monitoring allows Maintenance Engineers to analyze expenses and approve it. Data can be viewed in detail, summarized or graphically. Billing information can be compared YTD, budgets, with any billing earlier submitted or against billings from other counties. **Budgeting** allows allocation and monitoring of Districts and Local Agency budgets. Two other modules control **Payments** and **Auditing**,

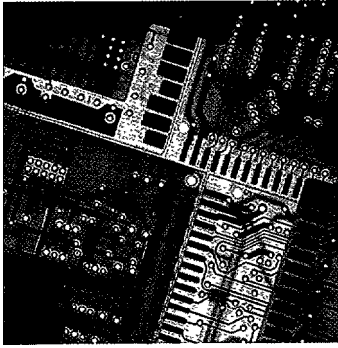
“LAPS will greatly improve operational efficiency and will make information more accessible. ”

Julie Creemers
Maintenance Accounts
Manager

Benefits:

- Improved management of \$100 Million budget
- Cost savings of \$50,000 annually through reduced paperwork
- Participation by all Local Agencies
- Quicker reimbursement of Winter Overruns
- On-line budget allocation and Monitoring
- Faster Payment
- Billing Confirmation and automated Error Notification to Local Agencies





Technology

PROSE is developed as an Object-Oriented, Client/Server application using PowerBuilder as the front-end tool and Oracle as the database *server*.

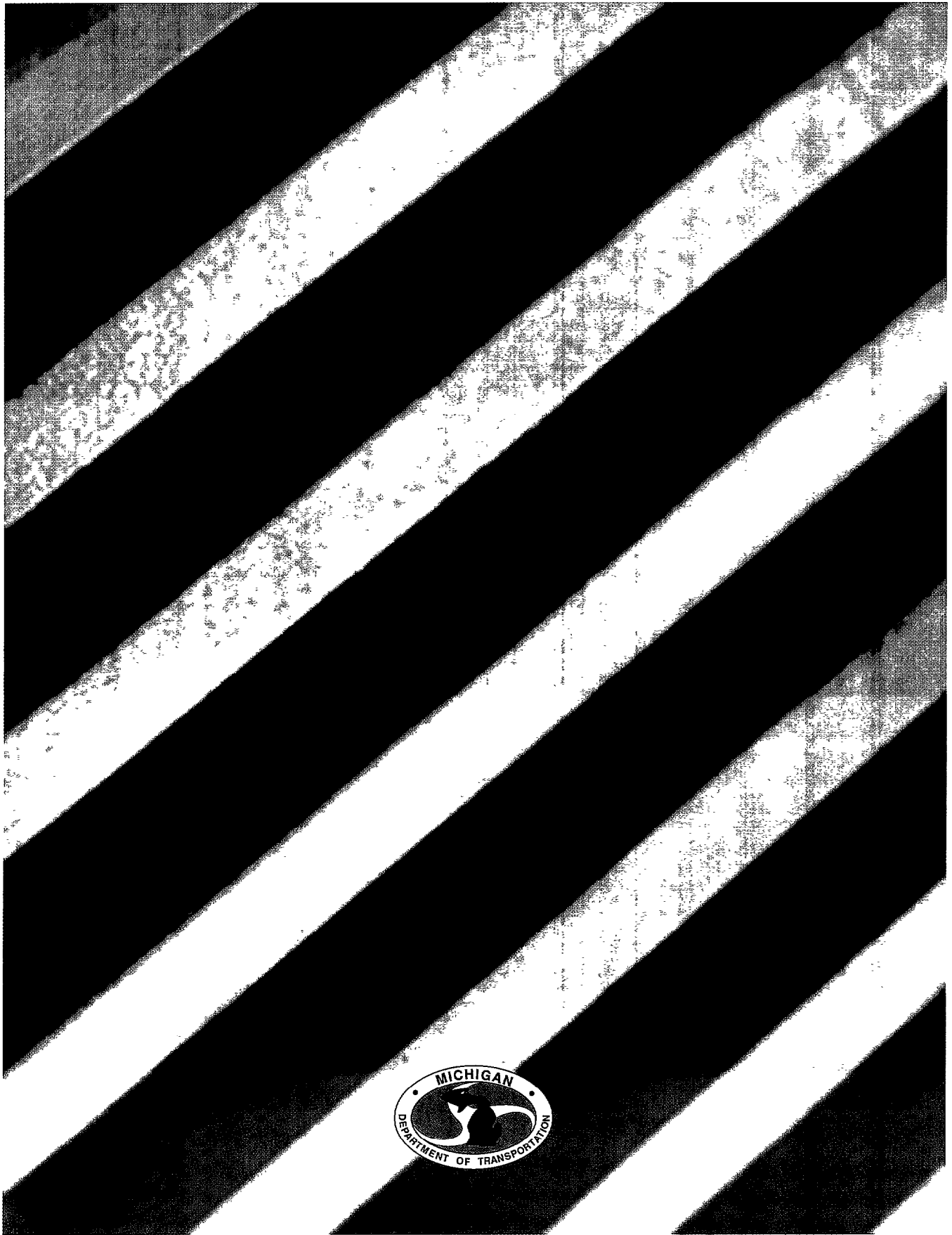
System Specifications:

- IBM PC/compatible 486/33MHz or higher
- 8MB RAM
- Microsoft Windows 3.1
- Novell Netware 3.2
- LAN Workplace 4.1
- SQL*NET V2.1
- Word Perfect 6.0
- Novell Groupwise 4.1

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The development team is supported by Complete Business Solutions Inc., a Farmington Hills, MI, based consulting company.



M-DOT: Providing the highest quality transportation services for economic benefit and improved quality of life.